STIC Search Report
EIC 1700

USPTO

STIC Database Tracking Number: 153241

TO: Helen Pezzuto **Location: 10A29** **Art Unit : 1713** **May 19, 2005** **Case Serial Number: 10/732934**	**From: Kathleen Fuller** **Location: EIC 1700** **REMSEN 4B28** **Phone: 571/272-2505** **Kathleen.Fuller@uspto.gov**

Search Notes

Search and Information Resources Administration

STIC Search Results Feedback Form

EIC17000

Questions about the scope or the results of the search? Contact ***the EIC searcher or contact:***

Kathleen Fuller, EIC 1700 Team Leader
571/272-2505 REMSEN 4B28

Voluntary Results Feedback Form

- *I am an examiner in Workgroup:* ☐ *Example: 1713*
- *Relevant prior art* ***found****, search results used as follows:*
  - ☐ 102 rejection
  - ☐ 103 rejection
  - ☐ Cited as being of interest.
  - ☐ Helped examiner better understand the invention.
  - ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
  (journal articles, conference proceedings, new product announcements etc.)

- *Relevant prior art* ***not found:***
  - ☐ Results verified the lack of relevant prior art (helped determine patentability).
  - ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to EIC1700 REMSEN 4B28

Access DB# 15324

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: HELEN PETTUTO Examiner #: 71058 Date: 5/10/05
Art Unit: 1713 Phone Number ~~30~~ 2-1108 Serial Number: 10/732,934
Mail Box and Bldg/Room Location: REM/0429 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: SEE ATTACHED

Inventors (please provide full names):

Earliest Priority Filing Date: 12/23/02

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Search method or utility of poly(N-isopropyl acrylamide) to inhibit protein deposition or adsorption on "medical device" → claim & see key words in 21-212 in WEST search attached.

I have come across some refs. on using NIPAM polymers to study protein adsorption on generic "laboratory" surfaces (i.e. glass, polystyrene), not much on "medical devices" like contact lens. Thanks!

****

STAFF USE ONLY

Searcher: K. Tuttle
Searcher Phone #:
Searcher Location:
Date Searcher Picked Up:
Date Completed: 5/19/05
Searcher Prep & Review Time: 40
Clerical Prep Time:
Online Time: 68

Type of Search

NA Sequence (#)
AA Sequence (#)
Structure (#)
Bibliographic ✓
Litigation
Fulltext
Patent Family
Other

Vendors and cost where applicable

STN ✓
Dialog
Questel/Orbit
Dr.Link
Lexis/Nexis
Sequence Systems
WWW/Internet
Other (specify)

PTO-1590 (8-01)

```
=> file hcaplus
FILE 'HCAPLUS' ENTERED AT 12:17:06 ON 19 MAY 2005
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```



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FILE COVERS 1907 - 19 May 2005  VOL 142 ISS 21
FILE LAST UPDATED: 18 May 2005  (20050518/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

=> d que l55
L40          12 SEA FILE=REGISTRY ABB=ON  (10043-35-3/BI OR 106392-12-5/BI OR
                110617-70-4/BI OR 13840-56-7/BI OR 139-33-3/BI OR 25189-55-3/BI
                 OR 50-70-4/BI OR 57-55-6/BI OR 717133-84-1/BI OR 717133-87-4/B
                I OR 7647-14-5/BI OR 994-36-5/BI)
L41           1 SEA FILE=REGISTRY ABB=ON  L40 AND PROPENAMID?
L42        1631 SEA FILE=HCAPLUS ABB=ON  L41
L43        1926 SEA FILE=HCAPLUS ABB=ON  L42 OR NIPAM
L45          27 SEA FILE=HCAPLUS ABB=ON  L43 AND PROTEIN? AND (MEDICAL? OR
                LENS? OR STENT# OR CATHETER? OR PROSTHET?)
L48           2 SEA FILE=HCAPLUS ABB=ON  L45 AND SURFACE?(3A)PROTEIN?
L51          21 SEA FILE=HCAPLUS ABB=ON  L43 AND (INHIBIT? OR PREVENT? OR
                DEPOSIT? OR FORMATION? OR FORM OR FORMED OR FORMING OR
                ABSOR?)(3A)PROTEIN?
L52           4 SEA FILE=HCAPLUS ABB=ON  L45 AND L51
L53           5 SEA FILE=HCAPLUS ABB=ON  L48 OR L52
L54           7 SEA FILE=HCAPLUS ABB=ON  L51 AND PHARMACE?/SC,SX
L55           9 SEA FILE=HCAPLUS ABB=ON  L53 OR L54


=> file medline
FILE 'MEDLINE' ENTERED AT 12:17:27 ON 19 MAY 2005

 FILE LAST UPDATED: 18 MAY 2005 (20050518/UP). FILE COVERS 1950 TO DATE.

 On December 19, 2004, the 2005 MeSH terms were loaded.

 The MEDLINE reload for 2005 is now available. For details enter HELP
 RLOAD at an arrow promt (=>). See also:

    http://www.nlm.nih.gov/mesh/
    http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html

 OLDMEDLINE now back to 1950.
```

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2005 vocabulary.

This file contains CAS Registry Numbers for easy and accurate substance identification.

```
=> d que l60
L40          12 SEA FILE=REGISTRY ABB=ON  (10043-35-3/BI OR 106392-12-5/BI OR
                110617-70-4/BI OR 13840-56-7/BI OR 139-33-3/BI OR 25189-55-3/BI
                 OR 50-70-4/BI OR 57-55-6/BI OR 717133-84-1/BI OR 717133-87-4/B
                I OR 7647-14-5/BI OR 994-36-5/BI)
L41           1 SEA FILE=REGISTRY ABB=ON  L40 AND PROPENAMID?
L42        1631 SEA FILE=HCAPLUS ABB=ON  L41
L43        1926 SEA FILE=HCAPLUS ABB=ON  L42 OR NIPAM
L60           2 SEA FILE=MEDLINE ABB=ON  L43 AND (INHIBIT? OR PREVENT? OR
                DEPOSIT? OR FORMATION? OR FORM OR FORMED OR FORMING OR
                ABSOR?)(3A)PROTEIN?


=> file wpix
FILE 'WPIX' ENTERED AT 12:17:41 ON 19 MAY 2005
COPYRIGHT (C) 2005 THE THOMSON CORPORATION

FILE LAST UPDATED:          17 MAY 2005      <20050517/UP>
MOST RECENT DERWENT UPDATE:     200531        <200531/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

>>> FOR A COPY OF THE DERWENT WORLD PATENTS INDEX STN USER GUIDE,
    PLEASE VISIT:
 http://www.stn-international.de/training_center/patents/stn_guide.pdf <<<

>>> FOR DETAILS OF THE PATENTS COVERED IN CURRENT UPDATES, SEE
    http://thomsonderwent.com/coverage/latestupdates/           <<<

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>>> NEW! FAST-ALERTING ACCESS TO NEWLY-PUBLISHED PATENT
    DOCUMENTATION NOW AVAILABLE IN DERWENT WORLD PATENTS INDEX
    FIRST VIEW - FILE WPIFV.
    FOR FURTHER DETAILS: http://www.thomsonderwent.com/dwpifv  <<<

>>> THE CPI AND EPI MANUAL CODES HAVE BEEN REVISED FROM UPDATE 200501.
    PLEASE CHECK:
http://thomsonderwent.com/support/dwpiref/reftools/classification/code-revision/
    FOR DETAILS. <<<

=> d que l65
L40          12 SEA FILE=REGISTRY ABB=ON  (10043-35-3/BI OR 106392-12-5/BI OR
                110617-70-4/BI OR 13840-56-7/BI OR 139-33-3/BI OR 25189-55-3/BI
                 OR 50-70-4/BI OR 57-55-6/BI OR 717133-84-1/BI OR 717133-87-4/B
                I OR 7647-14-5/BI OR 994-36-5/BI)
L41           1 SEA FILE=REGISTRY ABB=ON  L40 AND PROPENAMID?
L42        1631 SEA FILE=HCAPLUS ABB=ON  L41
L43        1926 SEA FILE=HCAPLUS ABB=ON  L42 OR NIPAM
L61           1 SEA FILE=WPIX ABB=ON  L43 AND (INHIBIT? OR PREVENT? OR
                DEPOSIT? OR FORMATION? OR FORM OR FORMED OR FORMING OR
                ABSOR?)(3A)PROTEIN?
L62           2 SEA FILE=WPIX ABB=ON  (NIPAM OR ?ACRYAMIDE?) AND (INHIBIT? OR
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                PREVENT? OR DEPOSIT? OR FORMATION? OR FORM OR FORMED OR
                FORMING OR ABSOR?)(3A)PROTEIN?
L63           1 SEA FILE=WPIX ABB=ON  L62 AND A61L?/IC
L64           3 SEA FILE=WPIX ABB=ON  (NIPAM OR ?ACRYAMIDE?) AND A61L?/IC
L65           3 SEA FILE=WPIX ABB=ON  L61 OR L63 OR L64


=> file embase
FILE 'EMBASE' ENTERED AT 12:17:53 ON 19 MAY 2005
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 FILE COVERS 1974 TO 12 May 2005 (20050512/ED)

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=> d que l68
L40          12 SEA FILE=REGISTRY ABB=ON  (10043-35-3/BI OR 106392-12-5/BI OR
                110617-70-4/BI OR 13840-56-7/BI OR 139-33-3/BI OR 25189-55-3/BI
                 OR 50-70-4/BI OR 57-55-6/BI OR 717133-84-1/BI OR 717133-87-4/B
                I OR 7647-14-5/BI OR 994-36-5/BI)
L41           1 SEA FILE=REGISTRY ABB=ON  L40 AND PROPENAMID?
L42        1631 SEA FILE=HCAPLUS ABB=ON  L41
L43        1926 SEA FILE=HCAPLUS ABB=ON  L42 OR NIPAM
L68           2 SEA FILE=EMBASE ABB=ON  L43 AND PROTEIN? AND (MEDICAL? OR
                LENS? OR STENT# OR CATHETER? OR PROSTHET?)


=> file biosis
FILE 'BIOSIS' ENTERED AT 12:18:11 ON 19 MAY 2005
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FILE COVERS 1969 TO DATE.
CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT
FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 18 May 2005 (20050518/ED)

FILE RELOADED: 19 October 2003.

=> d que l72
L40          12 SEA FILE=REGISTRY ABB=ON  (10043-35-3/BI OR 106392-12-5/BI OR
                110617-70-4/BI OR 13840-56-7/BI OR 139-33-3/BI OR 25189-55-3/BI
                 OR 50-70-4/BI OR 57-55-6/BI OR 717133-84-1/BI OR 717133-87-4/B
                I OR 7647-14-5/BI OR 994-36-5/BI)
L41           1 SEA FILE=REGISTRY ABB=ON  L40 AND PROPENAMID?
L42        1631 SEA FILE=HCAPLUS ABB=ON  L41
L43        1926 SEA FILE=HCAPLUS ABB=ON  L42 OR NIPAM
L70           4 SEA FILE=BIOSIS ABB=ON  L43 AND (INHIBIT? OR PREVENT? OR
                DEPOSIT? OR FORMATION? OR FORM OR FORMED OR FORMING OR
                ABSOR?)(3A)PROTEIN?
L71           2 SEA FILE=BIOSIS ABB=ON  L43 AND PROTEIN? AND (MEDICAL? OR
                LENS? OR STENT# OR CATHETER? OR PROSTHET?)
L72           6 SEA FILE=BIOSIS ABB=ON  L70 OR L71


=> file uspatful
FILE 'USPATFULL' ENTERED AT 12:18:25 ON 19 MAY 2005
```

FILE COVERS 1971 TO PATENT PUBLICATION DATE: 17 May 2005 (20050517/PD)
FILE LAST UPDATED: 17 May 2005 (20050517/ED)
HIGHEST GRANTED PATENT NUMBER: US6895596
HIGHEST APPLICATION PUBLICATION NUMBER: US2005102725
CA INDEXING IS CURRENT THROUGH 17 May 2005 (20050517/UPCA)
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 17 May 2005 (20050517/PD)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Apr 2005
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Apr 2005

>>> USPAT2 is now available. USPATFULL contains full text of the <<<
>>> original, i.e., the earliest published granted patents or <<<
>>> applications. USPAT2 contains full text of the latest US <<<
>>> publications, starting in 2001, for the inventions covered in <<<
>>> USPATFULL. A USPATFULL record contains not only the original <<<
>>> published document but also a list of any subsequent <<<
>>> publications. The publication number, patent kind code, and <<<
>>> publication date for all the US publications for an invention <<<
>>> are displayed in the PI (Patent Information) field of USPATFULL <<<
>>> records and may be searched in standard search fields, e.g., /PN, <<<
>>> /PK, etc. <<<

>>> USPATFULL and USPAT2 can be accessed and searched together <<<
>>> through the new cluster USPATALL. Type FILE USPATALL to <<<
>>> enter this cluster. <<<
>>> <<<
>>> Use USPATALL when searching terms such as patent assignees, <<<
>>> classifications, or claims, that may potentially change from <<<
>>> the earliest to the latest publication. <<<

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substance identification.

=> d que l74
L40 12 SEA FILE=REGISTRY ABB=ON (10043-35-3/BI OR 106392-12-5/BI OR
110617-70-4/BI OR 13840-56-7/BI OR 139-33-3/BI OR 25189-55-3/BI
OR 50-70-4/BI OR 57-55-6/BI OR 717133-84-1/BI OR 717133-87-4/B
I OR 7647-14-5/BI OR 994-36-5/BI)
L41 1 SEA FILE=REGISTRY ABB=ON L40 AND PROPENAMID?
L73 188 SEA FILE=USPATFULL ABB=ON L41
L74 0 SEA FILE=USPATFULL ABB=ON L73(6A)(MEDICAL? OR LENS OR STENT#
OR CATHETER? OR LENSES OR PROSTHE?)

=> => file rapra
FILE 'RAPRA' ENTERED AT 12:24:44 ON 19 MAY 2005
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FILE LAST UPDATED: 17 MAY 2005 <20050517/UP>
FILE COVERS 1972 TO DATE

>>> Simultaneous left and right truncation is available in the
basic index (/BI), and in the controlled term (/CT),
geographical term (/GT), and non-polymer term (/NPT) fields. <<<

>>> The RAPRA Classification Code is available as a PDF file
>>> and may be downloaded free-of-charge from:
>>> http://www.stn-international.de/stndatabases/details/rapra_classcodes.pdf

```
=> d que l83
L40          12 SEA FILE=REGISTRY ABB=ON  (10043-35-3/BI OR 106392-12-5/BI OR
                110617-70-4/BI OR 13840-56-7/BI OR 139-33-3/BI OR 25189-55-3/BI
                 OR 50-70-4/BI OR 57-55-6/BI OR 717133-84-1/BI OR 717133-87-4/B
                I OR 7647-14-5/BI OR 994-36-5/BI)
L41           1 SEA FILE=REGISTRY ABB=ON  L40 AND PROPENAMID?
L42        1631 SEA FILE=HCAPLUS ABB=ON  L41
L43        1926 SEA FILE=HCAPLUS ABB=ON  L42 OR NIPAM
L70           4 SEA FILE=BIOSIS ABB=ON  L43 AND (INHIBIT? OR PREVENT? OR
                DEPOSIT? OR FORMATION? OR FORM OR FORMED OR FORMING OR
                ABSOR?)(3A)PROTEIN?
L71           2 SEA FILE=BIOSIS ABB=ON  L43 AND PROTEIN? AND (MEDICAL? OR
                LENS? OR STENT# OR CATHETER? OR PROSTHET?)
L76           3 SEA FILE=RAPRA ABB=ON  L70 OR L71
L81           2 SEA FILE=RAPRA ABB=ON  (NIPAM OR ?ACRYAMIDE?) AND (INHIBIT? OR
                PREVENT? OR DEPOSIT? OR FORMATION? OR FORM OR FORMED OR
                FORMING OR ABSOR?)(3A)PROTEIN?
L83           3 SEA FILE=RAPRA ABB=ON  L76 OR L81

=> dup rem l55 l60 l65 l68 l72 l83
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PROCESSING COMPLETED FOR L55
PROCESSING COMPLETED FOR L60
PROCESSING COMPLETED FOR L65
PROCESSING COMPLETED FOR L68
PROCESSING COMPLETED FOR L72
PROCESSING COMPLETED FOR L83
L84          20 DUP REM L55 L60 L65 L68 L72 L83 (5 DUPLICATES REMOVED)

=> d l84 all 1-20

L84  ANSWER 1 OF 20  EMBASE  COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED.
     on STN                                                DUPLICATE 1
AN   2004309896  EMBASE
TI   Glucose permeable poly (dimethyl siloxane) poly (N-isopropyl acrylamide)
     interpenetrating networks as ophthalmic biomaterials.
AU   Liu L.; Sheardown H.
CS   H. Sheardown, Departments of Chemical Engineering, McMaster University,
     1280 Main St. West, Hamilton, Ont. L8S 4L7. sheardow@mcmaster.ca
SO   Biomaterials, (2005) Vol. 26, No. 3, pp. 233-244.
     Refs: 33
     ISSN: 0142-9612  CODEN: BIMADU
```

PUI S 0142-9612(04)00164-4
CY United Kingdom
DT Journal; Article
FS 012 Ophthalmology
027 Biophysics, Bioengineering and Medical Instrumentation
039 Pharmacy
LA English
SL English
ED Entered STN: 20040819
Last Updated on STN: 20040819
AB Poly (dimethyl siloxane) (PDMS) has been widely used as a biomaterial in ophthalmic and other applications due to its good compatibility, high mechanical strength, excellent oxygen permeability and transparency. However, for use as an artificial cornea, contact **lens** and in other applications, modifications with hydrophilic functional groups or polymers are necessary to improve wettability for tear **protein** and mucin interactions and to improve glucose permeability for cellular health. Poly (N-isopropyl acrylamide) (PNIPAAM) is a biocompatible and hydrophilic polymer that has been extensively studied on controlled drug release applications due to its lower critical solution temperature (LCST) phenomenon. In the current work, a composite interpenetrating network (IPN) of PDMS and PNIPAAM was formed to generate polymers with oxygen and glucose permeability as well as improved wettability compared to PDMS homopolymers and greater mechanical strength than PNIPAAM homopolymers. Transparent vinyl and hydroxyl terminated PDMS/PNIPAAM IPNs (PDMS-V and PDMS-OH IPNs, respectively) were successfully synthesized. Transmission electron microscopy images verified the structure of the IPNs. Surface analysis suggested that PNIPAAM was present on the surface as well as in the bulk material. PDMS-OH IPNs generated from a PDMS-OH matrix cured in the presence of solvent had the highest glucose permeability at 10(-7)cm(2)/s, comparable to that of the native cornea. The LCST phenomenon remained in these materials, although changes were not as abrupt as with pure PNIPAAM. These results suggest that these materials may be further developed as ophthalmic biomaterials or for controlled drug-release applications. .COPYRGT. 2004 Published by Elsevier Ltd.
CT Medical Descriptors:
permeability
wettability
synthesis
transmission electron microscopy
tensile strength
chemical structure
surface property
cornea
temperature
article
priority journal
Drug Descriptors:
*glucose
*dimeticone
*poly(n isopropylacrylamide)
*biomaterial
polymer
oxygen
vinyl derivative
hydroxyl group
solvent
RN (glucose) 50-99-7, 84778-64-3; (dimeticone) 32028-95-8, 68248-27-1, 9004-73-3, 9006-65-9; (poly(n isopropylacrylamide)) **25189-55-3**; (oxygen) 7782-44-7; (vinyl derivative) 2669-89-8

L84 ANSWER 2 OF 20 HCAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 2
AN 2004:550594 HCAPLUS
DN 141:90219
ED Entered STN: 09 Jul 2004
TI N-isopropylacrylamide polymer-containing compositions for **inhibiting protein absorption** on **medical** device surfaces
IN Ketelson, Howard Allen
PA USA
SO U.S. Pat. Appl. Publ., 8 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM B32B027-08
INCL 428474400
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): **63**

applicant

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2004131870	A1	20040708	US 2003-732934	20031211
WO 2004060429	A1	20040722	WO 2003-US39250	20031211

W: AU, BR, CA, CN, JP, KR, MX, NO, NZ, SG, US, ZA
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR

PRAI US 2002-436159P P 20021223

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2004131870	ICM	B32B027-08
	INCL	428474400
US 2004131870	NCL	428/474.400
	ECLA	A61L012/14B2; A61L012/14D2; C11D003/00B16; C11D003/37C8F

AB N-isopropylacrylamide (**NIPAM**) polymers is used to treat the surfaces of **medical** devices, such as contact **lenses** to prevent or reduce the **formation** of **protein deposits** on it. Thus, **NIPAM** polymer (P 2991) and a buffered vehicle containing sorbitol, boric acid, and NaCl were used to presoak contact **lenses**, which were then deposited with lysozyme solution, and the extracted lysozyme on the contact **lenses** were then determined by fluorescence spectrophotometer.

ST isopropylacrylamide polymer **protein absorption** **medical** device contact **lens**

IT Contact **lenses**
Medical goods
(N-isopropylacrylamide polymer-containing compns. for **inhibiting protein absorption** on **medical** device surfaces)

IT 50-70-4, Sorbitol, uses 57-55-6, Propylene glycol, uses 139-33-3, Disodium edetate 994-36-5, Sodium citrate 7647-14-5, Sodium chloride, uses 10043-35-3, Boric acid, uses 13840-56-7, Sodium borate 106392-12-5, Pluronic F 127 717133-84-1, P 2426F2 717133-87-4, AL 8496
RL: TEM (Technical or engineered material use); USES (Uses)
(N-isopropylacrylamide polymer-containing compns. for **inhibiting protein absorption** on **medical** device surfaces)

IT **25189-55-3**, N-Isopropylacrylamide homopolymer
RL: TEM (Technical or engineered material use); USES (Uses)

(P 1239, P 2991, P 604; N-isopropylacrylamide polymer-containing compns. for **inhibiting protein absorption** on **medical** device surfaces)

IT 110617-70-4, Tetronic 1304
RL: TEM (Technical or engineered material use); USES (Uses)
(Tetronic 1107; N-isopropylacrylamide polymer-containing compns. for **inhibiting protein absorption** on **medical** device surfaces)

L84 ANSWER 3 OF 20 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:824082 HCAPLUS
DN 141:337708
ED Entered STN: 08 Oct 2004
TI Multi-functional thermoresponsive polymeric materials and their uses as drug carriers
IN Lowe, Tao Lu; Kim, Young Shin; Huang, Xiao
PA Penn State Research Foundation, USA
SO PCT Int. Appl., 72 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C25D
CC 63-6 (**Pharmaceuticals**)
Section cross-reference(s): 35
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2004085712	A2	20041007	WO 2004-US8810	20040324
WO 2004085712	A3	20041209		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2003-457499P	P	20030324	
US 2003-466966P	P	20030501	
US 2003-519796P	P	20031114	

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2004085712	ICM	C25D

AB Multifunctional polymers are disclosed having a smart segment and a biodegradable segment. Advantageously, the biodegradable segment includes a hydrophilic segment and a hydrophobic segment. Embodiments include combining the multifunctional polymeric material with a biol. active substance in an aqueous loading environment and administering the composition as a drug delivery vehicle to a human subject. For example, a copolymer hydrogel was prepared from N-isopropylacrylamide and diacrylate poly(L-lactic acid) and dextran allyl isocyanate and was loaded with nerve growth factor (NGF) for releasing NGF thermoresponsively.
ST multiple functional thermoresponsive polymer drug carrier; isopropylacrylamide PLLA diacrylate dextran allyl isocyanate copolymer hydrogel NGF

IT Bone morphogenetic proteins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(2; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Receptors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(4-1BB; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Proteins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(A; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Chemokines
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(BCA-1; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Cytokine receptors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(BCMA (B-cell maturation protein); multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Chemokines
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(BRAK; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Chemokine receptors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(CCR8; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Chemokine receptors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(CXCR5; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Interleukin receptors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(IL-10R, antagonists; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT G protein-coupled receptors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(MCH-1R (melanin concentrating hormone receptor 1); multi-functional polymeric
and dendritic hydrogels for drug delivery)
IT Proteins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(SBP (sex steroid-binding protein); multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Proteins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(TNF-BP (tumor necrosis factor-binding protein); multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Interleukin 7 receptors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(antagonists; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Interleukin 2 receptors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(antagonists; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Interleukin 3 receptors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(antagonists; multi-functional polymeric and dendritic hydrogels for

drug delivery)
IT Interleukin 4 receptors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(antagonists; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Interleukin 5 receptors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(antagonists; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Interleukin 6 receptors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(antagonists; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Interleukin 8 receptors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(antagonists; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Growth factors, animal
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(bone-derived; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Neurotrophic factors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(brain-derived; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Elastins
Polyanhydrides
Polyphosphazenes
Polyurethanes, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(copolymers; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Megakaryocyte
(derived growth factors; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Cytokines
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(differentiation-inducing factor; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Nervous system, disease
(dyskinesia, drugs for; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Initiation factors (**protein formation**)
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(eIF-4G; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Growth factors, animal
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(endothelium-derived growth factors; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Growth factors, animal
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(epithelial cell growth factors; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Colony stimulating factor receptors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(erythropoiesis; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Neurotrophic factors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(glial-derived; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Drug delivery systems
(hydrogels; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Interleukin receptors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(interleukin 11, antagonists; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Interleukin receptors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(interleukin 12, antagonists; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Interleukin receptors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(interleukin 13, antagonists; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Interleukin receptors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(interleukin 15, antagonists; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Interleukin receptors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(interleukin 9, antagonists; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Tumor necrosis factors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(ligands for inducing apoptosis; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Analgesics
Anti-inflammatory agents
Antibiotics
Anticoagulants
Antimicrobial agents
Antiparkinsonian agents
Antitumor agents
Antiviral agents
Cytotoxic agents
Dissolution
Drugs
Erythropoiesis
Human
Lactobacillus
Micelles
Microgels
Microparticles
Microspheres
Nanoparticles
Nutrients
Permeability
Polymer degradation
Swelling, physical
Vaccines
(multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Dendritic polymers
Polyesters, biological studies
RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Amino acids, biological studies

Antibodies and Immunoglobulins
DNA
Enzymes, biological studies
Gene
Glucocorticoids
Growth factors, animal
Hormones, animal, biological studies
Interferons
Interferons
Interleukin 1 receptor antagonist
Interleukin 6
Interleukins
Lipopolysaccharides
Neurotrophic factors
Nucleic acids
Parathyroid hormone receptors
Platelet-derived growth factors
Polyamines
Proteins
RNA
Stem cell factor
Steroids, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(multi-functional polymeric and dendritic hydrogels for drug delivery)

IT Nanostructures
Spheres
(nanospheres; multi-functional polymeric and dendritic hydrogels for drug delivery)

IT Polyethers, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(ortho ester group-containing, copolymers; multi-functional polymeric and dendritic hydrogels for drug delivery)

IT Polyesters, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(phosphorus-containing, copolymers; multi-functional polymeric and dendritic hydrogels for drug delivery)

IT Polyamides, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(poly(amino acids), copolymers; multi-functional polymeric and dendritic hydrogels for drug delivery)

IT Receptors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(protein; multi-functional polymeric and dendritic hydrogels for drug delivery)

IT Antibacterial agents
(quinolone; multi-functional polymeric and dendritic hydrogels for drug delivery)

IT Interleukin 14
Interleukin 16
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(receptor antagonists; multi-functional polymeric and dendritic hydrogels for drug delivery)

IT Albumins, biological studies
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(serum, bovine; multi-functional polymeric and dendritic hydrogels for drug delivery)

IT Biological transport
(uptake; multi-functional polymeric and dendritic hydrogels for drug delivery)

IT Alzheimer's disease
(vaccines for; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Interferons
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(α; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Amyloid
Transforming growth factors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(β-; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT Interferons
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(γ; multi-functional polymeric and dendritic hydrogels for drug delivery)
IT 9061-61-4, Nerve growth factor
RL: ADV (Adverse effect, including toxicity); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(multi-functional polymeric and dendritic hydrogels for drug delivery)
IT 2387-23-7P
RL: BYP (Byproduct); PREP (Preparation)
(multi-functional polymeric and dendritic hydrogels for drug delivery)
IT 61-73-4, Methylene blue
RL: PRP (Properties)
(multi-functional polymeric and dendritic hydrogels for drug delivery)
IT 2210-25-5DP, reaction products with dextran-hydroxyethyl methacrylate lactate adduct **25189-55-3P**, Poly(N-isopropyl acrylamide) 700878-74-6P 701203-63-6P
RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(multi-functional polymeric and dendritic hydrogels for drug delivery)
IT 107-11-9, Allylamine 121-44-8, Triethylamine, reactions 141-43-5, 2-Aminoethanol, reactions 530-62-1, N,N'-Carbonyl diimidazole 538-75-0, 1,3-Dicyclohexyl carbodiimide 814-68-6, Acryloyl chloride 868-77-9, 2-Hydroxyethyl methacrylate 1476-23-9, Allyl isocyanate 2592-95-2, N-Hydroxybenzotriazole 4511-42-6, L-Lactide 9004-54-0, Dextran, reactions 26161-42-2 26811-96-1, Poly(L-lactic acid) 769967-66-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(multi-functional polymeric and dendritic hydrogels for drug delivery)
IT 26161-42-2DP, reaction products with aminoethanol and acryloyl chloride, polymers with dextran acrylates 193158-88-2P 199454-03-0P 248242-96-8P 301334-90-7P 303052-00-8P 706817-54-1P 706817-56-3P 769967-65-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(multi-functional polymeric and dendritic hydrogels for drug delivery)
IT 303067-65-4P
RL: RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(multi-functional polymeric and dendritic hydrogels for drug delivery)
IT 50-18-0, Cyclophosphamide 50-78-2, Aspirin 51-45-6, Histamine, biological studies 51-45-6D, Histamine, derivs. 51-85-4, Cystineamine 51-85-4D, Cystineamine, derivs. 52-86-8, Haloperidol 53-86-1, Indomethacin 55-98-1, Busulfan 57-22-7, Vincristine 57-96-5, Sulfinpyrazone 58-73-1, Diphenhydramine 58-73-1D, Diphenhydramine, derivs. 59-05-2, Methotrexate 60-00-4, Edetic acid, biological studies

60-54-8, Tetracycline 61-68-7, Mefenamic acid 61-72-3, Cloxacillin 68-89-3, Dipyrone 69-53-4, Ampicillin 81-81-2, Warfarin 103-90-2, Paracetamol 114-07-8, Erythromycin 129-00-0, Pyrene, biological studies 147-94-4, Cytarabine 446-86-6, Azathioprine 552-94-3, Salsalate 645-05-6, Altretamine 1397-89-3, Amphotericin B 1406-05-9, Penicillin 8064-90-2 9001-01-8, Kallikrein 9002-01-1, Streptokinase 9002-62-4, Lactogenic hormone, biological studies 9002-67-9, Luteotropic hormone 9002-68-0, Follicle stimulating hormone 9002-71-5, Thyroid stimulating hormone 9002-72-6, Growth hormone 9003-05-8D, Polyacrylamide, N-alkyl derivs., copolymer 9004-10-8, Insulin, biological studies 9005-49-6, Heparin, biological studies 9013-20-1, Streptavidin 9014-42-0, Thrombopoietin 9031-11-2, β-Galactosidase 9039-53-6, Urokinase 11096-26-7, Erythropoietin 11111-12-9, Cephalosporin 15307-86-5, Diclofenac 15663-27-1, Cisplatin 15802-18-3D, Cyanoacrylic acid, alkyl derivs., copolymer 19387-91-8, Tinidazole 22071-15-4, Ketoprofen 22149-38-8, Artemin 22494-42-4, Diflunisal 23214-92-8, Doxorubicin 24980-41-4D, Poly(ε-caprolactone), copolymers **25189-55-3D**, Poly(N-isopropylacrylamide, copolymers 25248-42-4D, Poly[oxy(1-oxo-1,6-hexanediyl)], copolymers 26023-30-3D, Poly[oxy(1-methyl-2-oxo-1,2-ethanediyl)], copolymers 26100-51-6D, Polylactic acid), copolymers 26161-42-2D, copolymers 26680-10-4D, Polylactide, copolymers 26780-50-7D, Glycolide-lactide copolymer, copolymers 26787-78-0, Amoxycillin 26811-96-1D, Poly(L-lactic acid), copolymers 31431-39-7, Mebendazole 33069-62-4, Taxol 33419-42-0, Etoposide 36322-90-4, Piroxicam 41575-94-4, Carboplatin 55142-85-3, Ticlopidine 56420-45-2, Epirubicin 62031-54-3, Fibroblast growth factor 63527-52-6, Cefotaxime 70458-96-7, Norfloxacin 71486-22-1, Vinorelbine 80214-83-1, Roxithromycin 81103-11-9, Clarithromycin 83869-56-1, Granulocyte macrophage colony stimulating factor 83905-01-5, Azithromycin 85721-33-1, Ciprofloxacin 87239-81-4, Cefpodoxime proxetil 88040-23-7, Cefepime 89339-61-7D, Poly(N-propylacrylamide, copolymers 90357-06-5, Bicalutamide 100986-85-4, Levofloxacin 107868-30-4, Exemestane 112143-11-0D, biotinylated, copolymers 112811-59-3, Gatifloxacin 120511-73-1, Anastrozole 122195-49-7D, copolymers 122304-04-5, Milk growth factor 127464-60-2, Vascular endothelial growth factor 130939-66-1, Neurotrophic factor 3 139639-23-9, Tissue plasminogen activator 143011-72-7, Granulocyte-colony stimulating factor 148348-15-6, Keratinocyte growth factors 154361-50-9, Capecitabine 169494-85-3, Leptin 180132-69-8, Cardiotrophin 1 205944-50-9, Osteoprotegerin 309758-71-2, Artemin 372092-80-3, Protein kinase 691397-13-4D, Ethylene oxide-propylene oxide triblock copolymer, copolymers
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(multi-functional polymeric and dendritic hydrogels for drug delivery)

L84 ANSWER 4 OF 20 HCAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 3
AN 2004:523138 HCAPLUS
DN 141:187276
ED Entered STN: 30 Jun 2004
TI Reversible meso-scale smart polymer-protein particles of controlled sizes
AU Kulkarni, Samarth; Schilli, Christine; Mueller, Axel H. E.; Hoffman, Allan S.; Stayton, Patrick S.
CS Department of Bioengineering, University of Washington, Seattle, WA, 98195, USA
SO Bioconjugate Chemistry (2004), 15(4), 747-753
CODEN: BCCHES; ISSN: 1043-1802
PB American Chemical Society
DT Journal
LA English

CC 9-16 (Biochemical Methods)
Section cross-reference(s): **63**

AB Functionalized beads and particles in the size range of tens to hundreds of nanometers (nano- to meso-scale) are finding increased applications in the bioanal. field. We show here that conjugates of streptavidin and the temperature-responsive polymer poly(N-isopropylacrylamide) (PNIPAAm), synthesized with low polydispersities by reversible addition-fragmentation chain transfer (RAFT) polymerization, rapidly **formed** mesoscale polymer-**protein** particles above the lower critical solution temperature (LCST). The average hydrodynamic diams. of these particles could be controlled between 250 nm to 900 nm by the choice of conjugate concentration and polymer mol. weight, and/or through control of the rate of temperature change. Once formed, the biohybrid particles were found to be stable for >16 h at the controlled size, unlike the free PNIPAAm which continued to aggregate and grow over time into very large and polydisperse aggregates. The reversibility between the smart polymer-protein particles and the free polymer-protein conjugates opens potential uses in traditional diagnostic formats and in microfluidic formats where the differential diffusive and phys. properties might be exploited for sepns., analyte concentration, and signal generation.

ST meso scale smart polymer protein particle controlled size

IT Diagnosis
(agents; reversible meso-scale smart polymer-protein particles of controlled sizes)

IT Proteins
RL: ARU (Analytical role, unclassified); PEP (Physical, engineering or chemical process); PYP (Physical process); ANST (Analytical study); PROC (Process)
(conjugates; reversible meso-scale smart polymer-protein particles of controlled sizes)

IT Critical solution temperature
(lower; reversible meso-scale smart polymer-protein particles of controlled sizes)

IT Drug delivery systems
(nanoparticles, controlled-release; reversible meso-scale smart polymer-protein particles of controlled sizes)

IT Mathematical methods
Polydispersity
(reversible meso-scale smart polymer-protein particles of controlled sizes)

IT **25189-55-3D**, Poly(N-isopropylacrylamide), conjugates with streptavidin
RL: ARU (Analytical role, unclassified); PEP (Physical, engineering or chemical process); PYP (Physical process); ANST (Analytical study); PROC (Process)
(reversible meso-scale smart polymer-protein particles of controlled sizes)

IT 9013-20-1D, Streptavidin, conjugates with PNIPAAm polymer
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(reversible meso-scale smart polymer-protein particles of controlled sizes)

RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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L84 ANSWER 5 OF 20 EMBASE
on STN

AN 2004150396 EMBASE

TI Local drug delivery in restenosis injury: Thermoresponsive co-polymers as potential drug delivery systems.

AU Kavanagh C.A.; Rochev Y.A.; Gallagher W.M.; Dawson K.A.; Keenan A.K.

CS A.K. Keenan, Department of Pharmacology, Conway Inst. Biomol. Biomed. Res., University College Dublin, Belfield, Dublin 4, Ireland. Alan.Keenan@ucd.ie

SO Pharmacology and Therapeutics, (2004) Vol. 102, No. 1, pp. 1-15.
Refs: 143
ISSN: 0163-7258 CODEN: PHTHDT

PUI S 0163-7258(04)00009-9

CY United States

DT Journal; General Review

FS 018 Cardiovascular Diseases and Cardiovascular Surgery
027 Biophysics, Bioengineering and Medical Instrumentation
030 Pharmacology
037 Drug Literature Index
039 Pharmacy

LA English

SL English

ED Entered STN: 20040422
Last Updated on STN: 20040422

AB The success of percutaneous transluminal coronary angioplasty in treatment of acute coronary syndromes has been compromised by the incidence of restenosis. The physical insult of balloon insertion can damage or remove the endothelial monolayer, thereby generating a prothrombotic surface. The resulting inappropriate response to injury can also lead to penetration of inflammatory cells, conversion of the underlying media to a synthetic phenotype, deposition of extracellular matrix, constrictive remodeling, and neointimal hyperplasia. While **stent** implantation at the time of balloon insertion has offset some of these events, inflammatory responses to the implanted biomaterial (**stent**) and intimal hyperplasia are still prominent features of the procedure, leading in 20-30% of cases to in-**stent** restenosis within a year. Systemic delivery of drugs designed to offset in-**stent** restenosis injury has been largely unsuccessful, which has led to the

development of strategies for coating **stents** with drugs for local delivery. Drug-eluting **stents** constitute an innovative means of further reducing the incidence of restenosis injury and clinical trials have shown encouraging results. This review focuses on properties of a class of environment-sensitive hydrogels, the N-isopropylacrylamide-based thermoresponsive co-polymers, on their potential roles as **stent** coatings, on their demonstrated ability to incorporate and release drugs that modify vascular endothelial and smooth muscle cell functions, and on issues that still await clarification, prior to their adoption in a clinical setting. .COPYRGT. 2004 Elsevier Inc. All rights reserved.

CT Medical Descriptors:
*restenosis: CO, complication
***drug eluting stent**
hydrogel
drug delivery system
vascular endothelium
smooth muscle fiber
artery injury
transluminal coronary angioplasty
thrombocyte aggregation
thrombogenesis
anticoagulant therapy
artery intima proliferation: CO, complication
species comparison
carotid artery injury
controlled drug release
radioisotope therapy
protein cross linking
human
review
priority journal
Drug Descriptors:
*poly(n isopropylacrylamide)
acetylsalicylic acid: PD, pharmacology
ticlopidine: PD, pharmacology
clopidogrel: PD, pharmacology
abciximab: PR, pharmaceutics
abciximab: PD, pharmacology
vapiprost: PD, pharmacology
eptifibatide: PD, pharmacology
tirofiban: PD, pharmacology
heparin: PR, pharmaceutics
heparin: PD, pharmacology
heparin: IV, intravenous drug administration
paclitaxel: PR, pharmaceutics
paclitaxel: PD, pharmacology
rapamycin: PR, pharmaceutics
rapamycin: PD, pharmacology

RN (poly(n isopropylacrylamide)) **25189-55-3**; (acetylsalicylic acid) 493-53-8, 50-78-2, 53663-74-4, 53664-49-6, 63781-77-1; (ticlopidine) 53885-35-1, 55142-85-3; (clopidogrel) 113665-84-2, 120202-66-6, 90055-48-4, 94188-84-8; (abciximab) 143653-53-6; (vapiprost) 85505-64-2; (eptifibatide) 148031-34-9; (tirofiban) 142373-60-2, 144494-65-5, 150915-40-5; (heparin) 37187-54-5, 8057-48-5, 8065-01-8, 9005-48-5; (paclitaxel) 33069-62-4; (rapamycin) 53123-88-9

CN Aspirin; Gr 32191b

L84 ANSWER 6 OF 20 MEDLINE on STN DUPLICATE 4
AN 2003529297 MEDLINE

DN PubMed ID: 14606910
TI Complex **formation** of **protein** with different water-soluble synthetic polymers.
AU Matsudo Toshiyuki; Ogawa Kazuyoshi; Kokufuta Etsuo
CS Institute of Applied Biochemistry, University of Tsukuba, Tsukuba, Ibaraki 305-8572, Japan.
SO Biomacromolecules, (2003 Nov-Dec) 4 (6) 1794-9.
Journal code: 100892849. ISSN: 1525-7797.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200407
ED Entered STN: 20031111
Last Updated on STN: 20040728
Entered Medline: 20040726
AB The **formation** of **protein**-polymer complexes was studied in an aqueous system using dynamic light scattering (DLS) and static light scattering (SLS) as the main experimental tools. Human serum albumin (HSA) was used as a protein and complexed with four representative water-soluble polymers: poly(N-isopropylacrylamide) (PNIPA), poly(ethylene glycol) (PEG), poly(vinyl pyrrolidone) (PVP), and poly(vinyl alcohol) (PVA). The first three molecular weights were within 420,000-540,000 and the last one was 270,000. The complexation was performed at 25 degrees C in 0.01 M NaCl solution adjusted to pH 3 with HCl as a function of mixing ratio (rm; molar ratio of polymer to HSA). From SLS experiments, we determined the molecular weight of the resulting complexes, from the value of which the number (nb) of bound proteins per polymer was estimated. It was found that each polymer forms an intrapolymer complex over a wide range of rm (1.2 > or = rm > or = 0.01). Then, a marked decrease in nb with increasing rm was found. Over the whole rm range, the HSA-PNIPA complex exhibited a large nb value, as compared with the other three complexes whose nb values at the same rm were close to one another. Both the hydrodynamic radius (Rh) by DLS and the radius of gyration (Rg) by SLS for the complexes of PNIPA, PVP, and PVA decreased and then reached a constant value as nb decreased with increasing rm. In the PEG system, however, there were a few changes in Rh and Rg with nb. The Rg/Rh ratio, as an indication of chain expansion, was found to increase with decreasing nb in the PNIPA system. The complexes of PVA and PVP displayed a similar tendency, although the magnitude of the increasing trend was smaller than that of the PNIPA complex. In contrast, the Rg/Rh ratio of the PEG complex hardly varied depending on nb. These results were discussed in connection with the differences of physicochemical properties among four water-soluble polymers.
CT Acrylic Resins: CH, chemistry
Dialysis
Humans
Light
Polyethylene Glycols: CH, chemistry
*Polymers: CH, chemistry
Polyvinyl Alcohol: CH, chemistry
Povidone: CH, chemistry
*Proteins: CH, chemistry
Research Support, Non-U.S. Gov't
Scattering, Radiation
Serum Albumin: CH, chemistry
Solubility
Water
RN **25189-55-3 (poly-N-isopropylacrylamide)**; 7732-18-5 (Water); 9002-89-5 (Polyvinyl Alcohol); 9003-39-8 (Povidone)

CN 0 (Acrylic Resins); 0 (Polyethylene Glycols); 0 (Polymers); 0 (Proteins); 0 (Serum Albumin)

L84 ANSWER 7 OF 20 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:592946 HCAPLUS
DN 140:231781
ED Entered STN: 04 Aug 2003
TI In-**Lens** cryo-high resolution scanning electron microscopy: methodologies for molecular imaging of self-assembled organic hydrogels
AU Apkarian, Robert P.; Wright, Elizabeth R.; Seredyuk, Victor A.; Eustis, Susan; Lyon, L. Andrew; Conticello, Vincent P.; Menger, Fredric M.
CS Integrated Microscopy and Microanalytical Facility, Emory University, Atlanta, GA, 30322, USA
SO Microscopy and Microanalysis (2003), 9(4), 286-295
CODEN: MIMIF7; ISSN: 1431-9276
PB Cambridge University Press
DT Journal
LA English
CC 9-5 (Biochemical Methods)
AB The micro- and nanoarchitectures of water-swollen hydrogels were routinely analyzed in three dimensions at very high resolution by two cryopreparation methods that provide stable low-temperature specimens for in-**lens** high magnification recordings. Gemini surfactants (gS), poly-N-isopropylacrylamides (p-NIP Am), and elastin-mimetic di- (db-E) and triblock (tb-E) copolymer **proteins** that **form** hydrogels have been routinely analyzed to the sub-10-nm level in a single day. After they were quench or high pressure frozen, samples in bulk planchets were subsequently chromium coated and observed at low temperature in an in-**lens** field emission SEM. Pre-equilibrated planchets (4-40°C) that hold 5-10 μl of hydrogel facilitate dynamic morphol. studies above and below their transition temps. Rapidly frozen samples were fractured under liquid nitrogen, low-temperature metal coated, and observed in-**lens** to assess the dispersion characteristics of micelles and fragile colloidal assemblies within bulk frozen water. Utilizing the same planchet freezing system, the cryoetch-HRSEM technique removed bulk frozen water from the hydrogel matrix by low-temperature, high-vacuum sublimation. The remaining frozen solid-state sample faithfully represented the hydrogel matrix. Cryo- and cryoetch-HRSEM provided vast vistas of hydrogels at low and intermediate magnifications whereas high magnification recordings and anaglyphs (stereo images) provided a three-dimensional prospective and measurements on a mol. level.
ST cryoetch high resoln SEM hydrogel morphol mol imaging
IT Surfactants
(Gemini A; in-**Lens** cryo-high resolution SEM: methodologies for mol. imaging of self-assembled organic hydrogels)
IT Etching
(cryo-; in-**Lens** cryo-high resolution SEM: methodologies for mol. imaging of self-assembled organic hydrogels)
IT Scanning electron microscopy
(cryoetch, high resolution; in-**Lens** cryo-high resolution SEM: methodologies for mol. imaging of self-assembled organic hydrogels)
IT Dispersion (of materials)
Hydrogels
Microstructure
Self-assembly
(in-**Lens** cryo-high resolution SEM: methodologies for mol. imaging of self-assembled organic hydrogels)
IT Imaging
(mol.; in-**Lens** cryo-high resolution SEM: methodologies for mol. imaging of self-assembled organic hydrogels)

IT **Proteins**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(triblock, elastin-mimetic; in-**Lens** cryo-high resolution SEM: methodologies for mol. imaging of self-assembled organic hydrogels)
IT 7732-18-5, Water, processes
RL: REM (Removal or disposal); PROC (Process)
(bulk frozen; in-**Lens** cryo-high resolution SEM: methodologies for mol. imaging of self-assembled organic hydrogels)
IT **25189-55-3**, Poly(N-isopropylacrylamide) 667915-32-4, Gemini A
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(in-**Lens** cryo-high resolution SEM: methodologies for mol. imaging of self-assembled organic hydrogels)
IT 7440-47-3, Chromium, reactions
RL: RGT (Reagent); RACT (Reactant or reagent)
(in-**Lens** cryo-high resolution SEM: methodologies for mol. imaging of self-assembled organic hydrogels)
RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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(10) Menger, F; Langmuir 2000, V16, P9113 HCAPLUS
(11) Qu, Y; J Am Chem Soc 2000, V122, P5014 HCAPLUS
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(15) Wright, E; Adv Funct Mater 2002, V12, P149 HCAPLUS
(16) Wright, E; Microsc Microanal 2003, V9, P171 HCAPLUS

L84 ANSWER 8 OF 20 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:210806 HCAPLUS
DN 139:296814
ED Entered STN: 18 Mar 2003
TI Temperature-responsive polymeric surface modifications by plasma polymerization: cell and **protein** interactions
AU Ratner, Buddy D.; Cheng, Xuanhong; Wang, Yanbing; Hanein, Yael; Bohringer, Karl F.
CS Department of Bioengineering, University of Washington Engineered Biomaterials, Seattle, WA, 98195, USA
SO Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (2003), 44(1), 198-199
CODEN: ACPPAY; ISSN: 0032-3934
PB American Chemical Society, Division of Polymer Chemistry
DT Journal; (computer optical disk)
LA English
CC 63-7 (Pharmaceuticals)
AB The **surface** characteristics, **protein** adsorption properties and cell interactions of plasma polymerized N-isopropylacrylamide were investigated. The **protein** adsorption of ppNIPAM above its low critical solution temperature (LCST) was found to be irreversible. Results also

show that the cells adhere and grow on ppNIPAM at 37° and detach from the surface at room temperature The ppNIPAM surfaces are non-toxic and excellent for cell growth. A microheater array can spatially control cell attachment to a ppNIPAM-treated chip, suggesting many possibilities for cell chips and proteomic chips.

ST acrylamide **protein** adsorption

IT Antibodies and Immunoglobulins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(IgG; temperature-responsive polymeric surface modifications by plasma polymerization)

IT Critical solution temperature
(lower; temperature-responsive polymeric surface modifications by plasma polymerization)

IT Polymerization
(plasma; temperature-responsive polymeric surface modifications by plasma polymerization)

IT Adsorption
(**protein**; temperature-responsive polymeric **surface** modifications by plasma polymerization)

IT Albumins, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(serum; temperature-responsive polymeric surface modifications by plasma polymerization)

IT **Prosthetic** materials and **Prosthetics**
(temperature-responsive polymeric surface modifications by plasma polymerization)

IT Fibrinogens
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(temperature-responsive polymeric surface modifications by plasma polymerization)

IT Polyesters, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(temperature-responsive polymeric surface modifications by plasma polymerization)

IT **25189-55-3**, Poly(N-Isopropylacrylamide)
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(temperature-responsive polymeric surface modifications by plasma polymerization)

IT 7631-86-9, Silica, biological studies 25038-59-9, PET, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(temperature-responsive polymeric surface modifications by plasma polymerization)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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L84 ANSWER 9 OF 20 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:79966 HCAPLUS
DN 141:42834
ED Entered STN: 01 Feb 2004
TI Multi-functional hydrogel systems for sustained and targeted release of nerve growth factor
AU Huang, Xiao; Nayak, Bishwa R.; Lowe, Tao L.
CS Department of Surgery, Pennsylvania State University, Hershey, PA, 17033,

USA
SO AIChE Annual Meeting, Conference Proceedings, San Francisco, CA, United States, Nov. 16-21, 2003 (2003), 155-158 Publisher: American Institute of Chemical Engineers, New York, N. Y.
CODEN: 69EZVH; ISBN: 0-8169-0941-5
DT Conference; (computer optical disk)
LA English
CC 63-7 (**Pharmaceuticals**)
AB A series of multi-functional hydrogel systems have been designed and synthesized for potential brain implantation to realize local and sustained release of nerve growth factor for the treatment of Alzheimer's disease. The systems are three-dimensional crosslinked copolymers composed of a thermo-responsive unit, a hydrolytically degradable and hydrophobic unit, and an enzymically degradable and hydrophilic unit, combining the merits of thermo-responsive and biodegradable polymeric drug delivery systems, and allowing a low-temperature aqueous NGF loading to **prevent protein** denaturation. The hydrogels show a lower critical solution temperature (LCST) at approx. 32°, and demonstrate different swelling and release profiles at temps. above or under the LCST. Cytotoxicity study suggested that the hydrogels were not toxic to PC-12 cells.
ST polyisopropylacrylamide polylactate dextran hydrogel implant sustained release Alzheimer disease
IT Drug delivery systems
(hydrogels, sustained-release; multi-functional hydrogel systems for sustained and targeted release of nerve growth factor)
IT **Prosthetic** materials and **Prosthetics**
(implants; multi-functional hydrogel systems for sustained and targeted release of nerve growth factor)
IT Polyesters, biological studies
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(lactic acid-based; multi-functional hydrogel systems for sustained and targeted release of nerve growth factor)
IT Critical solution temperature
(lower; multi-functional hydrogel systems for sustained and targeted release of nerve growth factor)
IT Brain
Cytotoxicity
Dissolution
Swelling, physical
(multi-functional hydrogel systems for sustained and targeted release of nerve growth factor)
IT Growth factors, animal
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(multi-functional hydrogel systems for sustained and targeted release of nerve growth factor)
IT 701203-63-6
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(hydrogel; multi-functional hydrogel systems for sustained and targeted release of nerve growth factor)
IT **25189-55-3**, Poly(N-isopropylacrylamide) 700878-74-6
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(multi-functional hydrogel systems for sustained and targeted release of nerve growth factor)
RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

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L84 ANSWER 10 OF 20 RAPRA COPYRIGHT 2005 RAPRA on STN
AN R:838527 RAPRA FS Rapra Abstracts
TI HYDROPHILIC STIMULI-RESPONSIVE PARTICLES FOR BIOMEDICAL APPLICATIONS.
AU Pichot C; Elaissari A; Duracher D; Meunier F; Sauzedde F (Ecole Normale Superieure de Lyon)
SO Macromolecular Symposia VOL.175, Aug.2001, p.285-97
ISSN: 1022-1360
PY 2001
DT Journal
LA English
AB Hydrophilic and stimuli-responsive submicro latex particles based on polyalkyl(meth)acrylamide were prepared by radical initiated polymerisation in heterogeneous media with the aid of a water soluble initiator and methylenebisacrylamide as crosslinker. The synthesis and properties of functionalised polystyrene-poly-N-isopropylacrylamide core-shell particles or poly-N-isopropylmethacrylamide (**NIPAM**) microgel particles are reviewed. Particle size analysis showed that highly monodispersed latexes could be synthesised when the nucleation period was short. The dramatic change in the colloidal properties observed, i.e. particle size and electrophoretic mobility, reflected the high thermal sensitivity of the particles. The hydrophilic nature of the particles below the volume phase transition temperature resulted in a drastic decrease in the physical adsorption of **proteins**. Some possible biomedical applications of the particles are considered briefly, e.g. the adsorption of RNA onto cationic poly(**NIPAM**) latexes as a function of pH, temperature, ionic strength, and adsorption time. 20 refs.
CC 6121; 42C3.10; 42C21; 6123; 94; 941; 9912
SC *QQ; OB; KR; UJ; UB
CT ADSORPTION; AMINOETHYL METHACRYLATE COPOLYMER; APPLICATION; BATCH POLYMERISATION; BATCH POLYMERIZATION; BIOMEDICAL APPLICATION; COLLOIDAL PROPERTIES; DATA; ELECTRON MICROSCOPY; ELECTRON SCANNING MICROSCOPY; ELECTROPHORESIS; ELECTROPHORETIC MOBILITY; EMULSION POLYMERISATION; EMULSION POLYMERIZATION; GEL; GELS; GRAPH; HYDROGEL; INSTITUTION; ISOPROPYL ACRYLAMIDE COPOLYMER; LATEX; LATICES; **MEDICAL**

APPLICATION; METHYLENE BISACRYLAMIDE COPOLYMER; MICROGEL; MICROSCOPY; MONODISPERSE; NUCLEATION; PARTICLE SIZE; PLASTIC; POLYISOPROPYL ACRYLAMIDE; POLYMERISATION; POLYMERIZATION; PROPERTIES; **PROTEIN**; SCANNING ELECTRON MICROGRAPH; SCANNING ELECTRON MICROSCOPE; SCANNING ELECTRON MICROSCOPY; SEM; STYRENE COPOLYMER; SYNTHESIS; TECHNICAL; TEM; THERMOPLASTIC; TRANSMISSION ELECTRON MICROSCOPY

NPT POTASSIUM PERSULFATE; POTASSIUM PERSULPHATE; RIBONUCLEIC ACID; RNA; STYRENE

SHR BIOMEDICAL APPLICATIONS, latex, acrylamide polymers, particle size, electrochemical properties, colloidal properties, microscopy, thermal properties; LATEX, biomedical applications, acrylamide polymers, particle size, electrochemical properties, colloidal properties, microscopy, thermal properties; ACRYLAMIDE POLYMERS, biomedical applications, latex, particle size, electrochemical properties, colloidal properties, microscopy, thermal properties; PARTICLE SIZE, biomedical applications, latex, acrylamide polymers, electrochemical properties, colloidal properties, microscopy, thermal properties; ELECTROCHEMICAL PROPERTIES, biomedical applications, latex, acrylamide polymers, particle size, colloidal properties, microscopy, thermal properties; COLLOIDAL PROPERTIES, biomedical applications, latex, acrylamide polymers, particle size, electrochemical properties, microscopy, thermal properties; MICROSCOPY, biomedical applications, latex, acrylamide polymers, particle size, electrochemical properties, colloidal properties, thermal properties; THERMAL PROPERTIES, biomedical applications, latex, acrylamide polymers, particle size, electrochemical properties, colloidal properties, microscopy

GT EUROPEAN COMMUNITY; EUROPEAN UNION; FRANCE; WESTERN EUROPE

L84 ANSWER 11 OF 20 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2000:814388 HCAPLUS
DN 133:364147
ED Entered STN: 21 Nov 2000
TI Affinity-controlling adsorbent containing stimulus-responsive polymer for separations and purifications
IN Yoshizako, Kimihiro; Akiyama, Yoshikatsu; Okano, Teruo; Ueno, Katsuhiko
PA Japan Chemical Innovation Institute, Japan; Japan as Represented by Director General of Agency of Industrial Science and Technology
SO PCT Int. Appl., 34 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM B01J020-32
ICS B01D015-08
CC 48-1 (Unit Operations and Processes)
Section cross-reference(s): 9, 35, 63, 80
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000067901	A1	20001116	WO 2000-JP3022	20000511
	W: AU, CA, JP, US				
	RW: DE, FR, GB, IT, SE				
	EP 1194228	A1	20020410	EP 2000-927741	20000511
	R: DE, FR, GB, IT, SE				
	JP 2003524680	T2	20030819	JP 2000-616920	20000511
PRAI	JP 1999-130267	A	19990511		
	WO 2000-JP3022	W	20000511		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES

WO 2000067901 ICM B01J020-32
ICS B01D015-08

AB Affinity-controlling adsorbents comprising stimulus-responsive polymers and affinity ligands, independently attached (e.g., covalently) to a support matrix, are useful for the separation and purification of target substances having physiol. activity. The adsorbent can be used for the purification of a target substance under a phys. stimulus while keeping ≥1 condition other than temperature constant (e.g., pH, organic solvent concentration or salt concentration). The adsorbed substances can be eluted using a temperature-dependent process. The support matrix is capable of **preventing** nonspecific adsorption of **proteins** and achieving an excellent separation performance.

ST affinity chromatog stimulus responsive polymer; biomol purifn affinity chromatog intelligent polymer; drug purifn affinity chromatog intelligent polymer

IT Affinity chromatographic stationary phases
Affinity chromatography
Biochemical molecules
Drugs
Dyes
(affinity adsorbents containing stimulus responsive polymer for affinity chromatog. separation and purification)

IT Acrylic polymers, uses
Ligands
Polymers, uses
RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(affinity adsorbents containing stimulus responsive polymer for affinity chromatog. separation and purification)

IT Metals, processes
Proteins, general, processes
RL: PEP (Physical, engineering or chemical process); PUR (Purification or recovery); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(affinity adsorbents containing stimulus responsive polymer for affinity chromatog. separation and purification)

IT 4419-11-8, 2,2'-Azobis(2,4-dimethylvaleronitrile) 57101-68-5, Pentanoic acid, 2,2'-azobis(4-cyano-
RL: CAT (Catalyst use); USES (Uses)
(affinity adsorbents containing stimulus responsive polymer for affinity chromatog. separation and purification)

IT 12236-82-7D, reaction products with epoxides and acrylic polymer matrixes **25189-55-3D**, N-Isopropylacrylamide, homopolymer, carboxy-terminated, hydroxysuccinimide esters, reaction products with aminated acrylic polymers and epoxides and Cibacron Blue F3G-A 31743-77-8D, Ethylene dimethacrylate-glycidyl methacrylate copolymer, aminated, reaction products with hydroxysuccinimide esters of polyisopropylacrylamide and epoxides and Cibacron Blue F3G-A
RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(affinity adsorbents containing stimulus responsive polymer for affinity chromatog. separation and purification)

IT 930-22-3, 1,3-Butadiene monoepoxide 2224-15-9, Ethylene glycol diglycidyl ether
RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(spacers; affinity adsorbents containing stimulus responsive polymer for affinity chromatog. separation and purification)

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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(6) Terumo Corp; JP 07136505 A 1995
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(9) W R Grace & Co; EP 0534016 A 1993 HCAPLUS

L84 ANSWER 12 OF 20 RAPRA COPYRIGHT 2005 RAPRA on STN
AN R:747453 RAPRA FS Rapra Abstracts
TI METAL-COPOLYMER COMPLEXES OF N-ISOPROPYLACRYLAMIDE FOR AFFINITY PRECIPITATION OF PROTEINS.
AU Galaev I Y; Kumar A; Mattiasson B (Lund,University)
SO Journal of Macromolecular Science A 36, No.7/8, 1999, p.1093-105 ISSN: 0022-233X
PY 1999
DT Journal
LA English
AB Copolymers of N-isopropylacrylamide(**NIPAM**) with styrene derivative of iminodiacetic acid and 1-vinylimidazole(VI) were synthesised by radical copolymerisation and metal complexation characteristics of the copolymers were investigated. The thermoprecipitation property of the copolymers indicated the application of Cu(II)-loaded copolymer of poly(VI/**NIPAM**) as a potential carrier for the metal chelate affinity precipitation of proteins. The studies carried out on the purification of **protein inhibitors** from different cereals suggested the specific interaction of metal ions bound on the copolymer and the histidine residues on the surface of the target protein. The recovered copolymers could be reloaded with metal ions and could be reused a number of times with high efficiency. 23 refs. (PMSE Symposium on Biomedical Applications of Water-Soluble Polymers and Hydrogels, Boston, USA, Aug.1998)
CC 42C3.10.1A; 6M2
SC *QM; KN
CT ACRYLAMIDE COPOLYMER; AFFINITY PRECIPITATION; APPLICATION; COMPLEX; DATA; FREE-RADICAL POLYMERISATION; GRAPH; IMINODIACETIC ACID COPOLYMER; INSTITUTION; INTERACTION; ISOPROPYL ACRYLAMIDE COPOLYMER; PLASTIC; POLYCHELATE; POLYMERIC COMPLEX; POLYMERISATION; POLYMERIZATION; PRECIPITATION; PROTEIN; PURIFICATION; RADICAL POLYMERISATION; RADICAL POLYMERIZATION; REUSABLE; TABLES; TECHNICAL; THERMOPLASTIC; VINYL IMIDAZOLE COPOLYMER
NPT COPPER; HISTIDINE; METAL; METAL ION
SHR POLYCHELATES, acrylamide copolymers; ACRYLAMIDE COPOLYMERS, polychelates
GT SCANDINAVIA; SWEDEN; WESTERN EUROPE

L84 ANSWER 13 OF 20 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1999:584449 HCAPLUS
DN 131:327387
ED Entered STN: 17 Sep 1999
TI Modification of liposomes with N-substituted polyacrylamides: identification of proteins adsorbed from plasma
AU Yamazaki, A.; Winnik, F. M.; Cornelius, R. M.; Brash, J. L.
CS Department of Chemical Engineering, McMaster University, Hamilton, ON, Can.
SO Biochimica et Biophysica Acta (1999), 1421(1), 103-115 CODEN: BBACAQ; ISSN: 0006-3002

PB Elsevier Science B.V.
DT Journal
LA English
CC 63-3 (**Pharmaceuticals**)
Section cross-reference(s): 6
AB Liposomes prepared from DMPC (80%) and cholesterol (20%) were modified with a series of hydrophobically modified N-substituted polyacrylamides, namely, poly[N-isopropylacrylamide] (PNIPAM), poly[N,N-bis(2-methoxyethyl) acrylamide] (PMEAM), and poly[(3-methoxypropyl)acrylamide] (PMPAM). The hydrophobic group, N-[4-(1-pyrenylbutyl)-N-n-octadecylamine] was attached to one end of the polymer chains to serve as an anchor for incorporation into the liposome bilayer. Liposome-polymer interactions were confirmed using fluorescence spectroscopy and chemical anal. Microscopy revealed differences in aggregation tendency between unmodified and polymer-modified liposomes. Proteins adsorbed to liposome surfaces during exposure to human plasma were identified by immunoblot anal. It was found that both unmodified and polymer-modified liposomes adsorb a wide variety of plasma proteins. Contact phase coagulation proteins, complement proteins, cell-adhesive **proteins**, serine protease **inhibitors**, plasminogen, antithrombin III, prothrombin, transferrin, α2-microglobulin, Hb, haptoglobin and β-lipoprotein as well as the major plasma proteins were all detected. Some differences were found between the unmodified and polymer-modified liposomes. The unmodified liposomes adsorbed plasminogen mainly as the intact protein, whereas on the modified liposomes plasminogen was present in degraded form. Also, the liposomes modified with PNIPAM in its extended conformation (below the lower critical solution temperature) appeared to adsorb less protein than those containing the 'collapsed' form of PNIPAM (above the LCST).
ST liposome polyacrylamide deriv plasma protein adsorption; blood plasma protein liposome polyacrylamide
IT Blood plasma
Molecular association
(adsorption of plasma proteins to unmodified and N-substituted polyacrylamide-modified liposome membrane surface)
IT Blood-coagulation factors
Cell adhesion molecules
Complement
Haptoglobin
Hemoglobins
Lipoproteins
Transferrins
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(adsorption of plasma proteins to unmodified and N-substituted polyacrylamide-modified liposome membrane surface)
IT Proteins, general, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(blood; adsorption of plasma proteins to unmodified and N-substituted polyacrylamide-modified liposome membrane surface)
IT Drug delivery systems
(liposomes; adsorption of plasma proteins to unmodified and N-substituted polyacrylamide-modified liposome membrane surface)
IT Microglobulins
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(α2-microglobulins; adsorption of plasma proteins to unmodified and N-substituted polyacrylamide-modified liposome membrane surface)

IT 9003-05-8D, Polyacrylamide, N-substituted derivs. **25189-55-3**, Poly[N-isopropylacrylamide] 107374-87-8 125998-87-0
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); BIOL (Biological study); PROC (Process)
(adsorption of plasma proteins to unmodified and N-substituted polyacrylamide-modified liposome membrane surface)

IT 9000-94-6, Antithrombin III 9001-26-7, Prothrombin 9001-91-6, Plasminogen 139691-92-2, Proteins, specific or class, serine **proteinase-inhibiting**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(adsorption of plasma **proteins** to unmodified and N-substituted polyacrylamide-modified liposome membrane surface)

IT 57-88-5, Cholesterol, biological studies 18656-38-7, DMPC
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(liposome; adsorption of plasma proteins to unmodified and N-substituted polyacrylamide-modified liposome membrane surface)

RE.CNT 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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L84 ANSWER 14 OF 20 HCAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 5
AN 1998:793630 HCAPLUS
DN 130:129920
ED Entered STN: 21 Dec 1998

TI Signal transduction and cytoskeletal reorganization are required for cell detachment from cell culture surfaces grafted with a temperature-responsive polymer

AU Yamato, Masayuki; Okuhara, Minako; Karikusa, Fumiko; Kikuchi, Akihiko; Sakurai, Yasuhisa; Okano, Teruo

CS Institute of Biomedical Engineering, Tokyo Women's Medical University, Shinjuku, Tokyo, 162-866, Japan

SO Journal of Biomedical Materials Research (1999), 44(1), 44-52
CODEN: JBMRBG; ISSN: 0021-9304

PB John Wiley & Sons, Inc.

DT Journal

LA English

CC 63-7 (**Pharmaceuticals**)

AB We have developed a new cell culture substrate grafted with a temperature-responsive polymer, poly(N-isopropylacrylamide) (PIPAAm) using an electron beam irradiation method. These surfaces are hydrophobic in culture at 37°C due to the hydration/dehydration changes intrinsic to PIPAAm at 32°C, and they become highly hydrophilic below 32°C. At 37°C grafted and ungrafted surfaces showed no difference with regard to attachment, spreading, growth, confluent cell d., and morphol. of bovine aortic endothelial cells. Stress fibers, peripheral bands, and focal contacts were established in similar ways. After the medium temperature was decreased to 20°C, spread cells lost their flattened morphol., acquiring a rounded cell appearance similar to that of cells immediately after plating. After mild agitation cells floated free from the dish surface without trypsin treatment. Neither cell morphol. changes nor cell detachment occurred on ungrafted surfaces. An ATP synthesis inhibitor, sodium azide, and a tyrosine kinase inhibitor, genistein, suppressed cell morphol. changes and cell detachment while a **protein** synthesis **inhibitor**, cycloheximide, slightly enhanced cell detachment. An actin filament stabilizer, phalloidin, and its depolymerizer, cytochalasin D, also inhibited cell detachment. These findings suggest that cell detachment on grafted surfaces is mediated by intracellular signal transduction and reorganization of the cytoskeleton. While trypsinization causes damage to the cell membrane **surface** and extracellular matrix **proteins**, this alternative low temperature treatment is exceptionally noninvasive. The temperature-responsive cell culture surface also should prove useful for investigating the mol. machinery involved in cell-surface detachment.

ST polymer temp responsive cell culture surface; signal transduction cell culture surface; cytoskeletal reorganization cell culture surface

IT Artery
Artery
(aorta, endothelium; signal transduction and cytoskeletal reorganization are required for cell detachment from cell culture surfaces grafted with a temperature-responsive polymer)

IT Actins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(filaments; signal transduction and cytoskeletal reorganization are required for cell detachment from cell culture surfaces grafted with a temperature-responsive polymer)

IT Animal tissue culture
Cytoskeleton
Prosthetic materials and **Prosthetics**
Signal transduction, biological
(signal transduction and cytoskeletal reorganization are required for cell detachment from cell culture surfaces grafted with a temperature-responsive polymer)

IT **25189-55-3**, Poly(N-isopropylacrylamide)

RL: BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(signal transduction and cytoskeletal reorganization are required for cell detachment from cell culture surfaces grafted with a temperature-responsive polymer)

IT 9002-07-7, Trypsin
RL: PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(signal transduction and cytoskeletal reorganization are required for cell detachment from cell culture surfaces grafted with a temperature-responsive polymer)

RE.CNT 53 THERE ARE 53 CITED REFERENCES AVAILABLE FOR THIS RECORD

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L84 ANSWER 15 OF 20 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
AN 1998:403884 BIOSIS
DN PREV199800403884
TI Affinity precipitation of alpha-amylase inhibitor from wheat meal by metal chelate affinity binding using Cu(II)-loaded copolymers of 1-vinylimidazole with N-isopropylacrylamide.
AU Kumar, A.; Galaev, I. Yu; Mattiasson, B. [Reprint author]
CS Dep. Biotechnol., Cent. Chem. Chem. Eng., Lund Univ., P.O. Box 124, S-221 00 Lund, Sweden
SO Biotechnology and Bioengineering, (Sept. 20, 1998) Vol. 59, No. 6, pp. 695-704. print.
CODEN: BIBIAU. ISSN: 0006-3592.
DT Article
LA English
ED Entered STN: 21 Sep 1998
Last Updated on STN: 5 Nov 1998
AB A method for purifying alpha-amylase inhibitor from wheat meal based on immobilized metal affinity with a thermosensitive copolymer is developed. The studies represent the thermoprecipitation properties of the copolymers of N-isopropylacrylamide (**NIPAM**) with iminodiacetic acid (IDA) and 1-vinylimidazole (VI), respectively. The polymer which is obtained by the copolymerization of 1-vinylimidazole and N-isopropylacrylamide, charged with Cu(II), exhibited specific interaction of the metal ions to the **protein inhibitor.** The precipitation was induced by salt and the recovery of the amylase inhibitor was achieved by dissolving the inhibitor-polymer complex in imidazole buffer and subsequent precipitation of the polymer. A single family of the alpha-amylase inhibitor was recovered from the polymer with 89% yield and about fourfold purification. The SDS-PAGE pattern showed significant purification of the inhibitor. The binding of the inhibitor to the Cu(II)-polymer conjugate depends upon the Cu(II) concentration in the copolymer and also upon the concentration of the protein. The recovered polymer could be reused with reasonable efficiency.
CC Food technology - General and methods 13502
Biochemistry methods - Proteins, peptides and amino acids 10054
Biochemistry studies - General 10060
Biochemistry studies - Proteins, peptides and amino acids 10064
Biochemistry studies - Minerals 10069
Biophysics - Methods and techniques 10504
Biophysics - Molecular properties and macromolecules 10506
Enzymes - Physiological studies 10808
Food technology - Cereal chemistry 13510
Plant physiology - Chemical constituents 51522
IT Major Concepts
Bioprocess Engineering; Foods; Methods and Techniques
IT Chemicals & Biochemicals
alpha-amylase; alpha-amylase inhibitor; copper(II); iminodiacetic acid: copolymers; N-isopropylacrylamide: copolymers; 1-vinylimidazole
IT Methods & Equipment
immobilized metal affinity precipitation: purification method; SDS-PAGE [SDS-polyacrylamide gel electrophoresis]: purification method

IT Miscellaneous Descriptors
wheat meal
RN 9000-90-2 (alpha-amylase)
15158-11-9 (copper(II))
142-73-4 (iminodiacetic acid)
2210-25-5 (N-isopropylacrylamide)
1072-63-5 (1-vinylimidazole)
12190-70-4Q (CU(II))
108334-12-9Q (CU(II))
120146-54-5Q (CU(II))
122297-32-9Q (CU(II))

L84 ANSWER 16 OF 20 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
AN 1999:135058 BIOSIS
DN PREV199900135058
TI Isolation and separation of alpha-amylase inhibitors I-1 and I-2 from seeds of ragi (Indian finger millet, Eleusine coracana) by metal chelate affinity precipitation.
AU Kumar, A.; Galaev, I. Yu.; Mattiasson, B. [Reprint author]
CS Dep. Biotechnol., Cent. Chem. Chem. Eng., Lund Univ., P.O. Box 124, Lund S-22100, Sweden
SO Bioseparation, (1998) Vol. 7, No. 3, pp. 129-136. print.
ISSN: 0923-179X.
DT Article
LA English
ED Entered STN: 31 Mar 1999
Last Updated on STN: 31 Mar 1999
AB The concept of immobilized metal affinity chromatography (IMAC) was integrated with affinity precipitation for the single step isolation of alpha-amylase inhibitors I-1 and 1-2 from the seeds of ragi (Indian finger millet, Eleusine coracana). alpha-Amylase inhibitor I-1 was purified 13-fold with a yield of 84%, using Cu(II) loaded thermosensitive metal chelate copolymer of N-isopropylacrylamide (**NIPAM**) and 1-vinyl imidazole (VI). The **protein** also showed trypsin **inhibitory** activity. The binding of the protein to the copolymer was strongly pH dependent. alpha-Amylase inhibitor 1-2 was recovered in the supernatant as unprecipitated protein with significant purification and constituted 27% of the total inhibitor power. The yield with respect to inhibitor 1-2 was around 85%. Sodium dodecylsulfate-polyacrylamide gel electrophoresis (SDS-PAGE) showed significant purification of inhibitor I-1 and indicated evident separation of the two proteins on metal chelate affinity precipitation.
CC Plant physiology - Chemical constituents 51522
Comparative biochemistry 10010
Biochemistry methods - Proteins, peptides and amino acids 10054
Biochemistry studies - Proteins, peptides and amino acids 10064
Biophysics - Methods and techniques 10504
Biophysics - Molecular properties and macromolecules 10506
Enzymes - Methods 10804
Food technology - Cereal chemistry 13510
IT Major Concepts
Enzymology (Biochemistry and Molecular Biophysics); Methods and Techniques
IT Chemicals & Biochemicals
metal chelate copolymers; proteins: isolation, separation; I-1 alpha-amylase inhibitor: isolation, separation; I-2 alpha-amylase inhibitor: isolation, separation
IT Methods & Equipment
immobilized metal affinity chromatography: chromatographic techniques,

purification method; metal chelate affinity precipitation: Isolation/Purification Techniques: CB, precipitation method, purification method; precipitation techniques; SDS-polyacrylamide gel electrophoresis: analytical method, electrophoretic techniques

IT Miscellaneous Descriptors
protein binding; separation technology

ORGN Classifier
Gramineae 25305
Super Taxa
Monocotyledones; Angiospermae; Spermatophyta; Plantae
Organism Name
Eleusine coracana [Indian finger millet]
Taxa Notes
Angiosperms, Monocots, Plants, Spermatophytes, Vascular Plants

RN 9000-90-2 (ALPHA-AMYLASE)

L84 ANSWER 17 OF 20 RAPRA COPYRIGHT 2005 RAPRA on STN
AN R:617437 RAPRA FS Rapra Abstracts
TI NEURAL CELL PATTERN FORMATION ON GLASS AND OXIDISED SILICONE SURFACES MODIFIED WITH POLY N-ISOPROPYLACRYLAMIDE.
AU Bohanon T; Elender G; Knoll W; Koeberle P; Lee J-S; Offenhaeusser A; Ringsdorf H; Sackmann E; Simon J; Tovar G; Winnik F M (Gutenberg,University; Munich,University; RIKEN; Max-Planck-Institut fuer Polymerforschung)
SO Journal of Biomaterials Science : Polymer Edition 8, No.1, 1996, p.19-39
PY 1996
DT Journal
LA English
AB Control over the adsorption of proteins and over the adsorption and spatial orientation of mammalian cells onto surfaces has been achieved by modification of glass and other silicon oxide substrates with poly(N-isopropyl acrylamide) (PNIPAM). The functionalisation of the substrates was achieved either by a polymer-analogous reaction of aminosilanes with reactive N-isopropyl acrylamide (**NIPAM**) copolymers or by copolymerisation of **NIPAM** with surface-bound methacrylsilane. The resultant coatings were characterised by FT-IR, ellipsometry, and surface plasmon resonance measurements. The adsorption of two proteins - fibrinogen and ribonuclease - on these surfaces was studied in situ by real time surface plasmon resonance measurements. The PNIPAM-grafted surfaces prepared by either chemical procedure inhibited the adsorption of both **proteins.** More importantly they **prevented** the adhesion of neuroblastomaXglioma hybrid cells cultured either in serum-free medium or in a medium containing serum proteins. Deep-UV irradiation was used to perform ablation processes and to create patterns permitting the examination of spatially controlled adhesion and growth of cells. It is shown that patterned ultrathin polymer films on glass are suitable substrates for controlling the interactions of cells with surfaces, capable of directing the attachment and spreading of cells. 47 refs.
CC 42C3.10.1; 6M
SC *QM; KK
CT ACRYLAMIDE POLYMER; ADSORBENT; ADSORPTION; COMPANIES; COMPANY; ELLIPSOMETRY; FOURIER TRANSFORM; GRAFT; GRAFTING; GRAPH; INFRA-RED SPECTRA; INFRARED SPECTRA; INFRARED SPECTROPHOTOMETRY; INFRARED SPECTROSCOPY; IR SPECTRA; IR SPECTROMETRY; IR SPECTROSCOPY; IR SPECTRUM; PLASTIC; POLYACRYLAMIDE; POLYISOPROPYL ACRYLAMIDE; POLYMERIC ADSORBENT; PROTEIN; TABLES; TECHNICAL; THERMOPLASTIC; THERMOSET; VIBRATIONAL SPECTROSCOPY
NPT GLASS; ISOPROPYL ACRYLAMIDE; SILICONE
SHR POLYMERIC ADSORBENTS, isopropylacrylamide polymers, proteins;

ISOPROPYLACRYLAMIDE POLYMERS, polymeric adsorbents
GT EUROPEAN COMMUNITY; EUROPEAN UNION; GERMANY; JAPAN; WESTERN EUROPE

L84 ANSWER 18 OF 20 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
AN 1991:91726 BIOSIS
DN PREV199191050616; BA91:50616
TI POLYMER-**PROTEIN** CONJUGATES II. AFFINITY PRECIPITATION SEPARATION OF HUMAN IMMUNE GAMMA GLOBULIN BY A POLY-N-ISOPROPYLACRYLAMIDE **PROTEIN** A CONJUGATE.
AU CHEN J P [Reprint author]; HOFFMAN A S
CS CENTER BIOENGINEERING, FL-20, UNIVERSITY WASHINGTON, SEATTLE, WA 98195, USA
SO Biomaterials, (1990) Vol. 11, No. 9, pp. 631-634.
CODEN: BIMADU. ISSN: 0142-9612.
DT Article
FS BA
LA ENGLISH
ED Entered STN: 11 Feb 1991
Last Updated on STN: 13 Apr 1991
AB The conjugate of **protein** A with poly(N-isopropylacrylamide) was synthesized and utilized in the separation of human immunogammaglobulin. In the separation process, poly(N-isopropylacrylamide)-**protein** A conjugate binds to the immunoglobulin with high specificity to form the poly(N-isopropylacrylamide)-**protein** A/immunoglobulin complex. The complex can be conveniently separated by precipation upon heating above the lower critical solution temperature of the poly(N-isopropylacrylamide)-**protein** A/immunogammaglobulin complex. The separation capacity of poly(N-isopropylacrylamide)-**protein** A conjugate for human immunogammaglobulin was studied and it was demonstrated that approximately one out of every four **protein** A molecules binds to human immunogammaglobulin with a dissociation constant (Ks) of 3 + 10-6 M. The affinity precipitation separation of human immunogammaglobulin is a rapid process which avoids the need for chromatographic columns. It can also be designed to run in a continuous mode.
CC Clinical biochemistry - General methods and applications 10006
Biochemistry methods - Proteins, peptides and amino acids 10054
Biochemistry methods - Carbohydrates 10058
Biochemistry studies - Proteins, peptides and amino acids 10064
Biochemistry studies - Carbohydrates 10068
Biophysics - Methods and techniques 10504
Biophysics - Molecular properties and macromolecules 10506
Immunology - General and methods 34502
IT Major Concepts
Biochemistry and Molecular Biophysics; Clinical Chemistry (Allied **Medical** Sciences); Immune System (Chemical Coordination and Homeostasis)
ORGN Classifier
Hominidae 86215
Super Taxa
Primates; Mammalia; Vertebrata; Chordata; Animalia
Taxa Notes
Animals, Chordates, Humans, Mammals, Primates, Vertebrates.
RN **25189-55-3** (POLY-(N-ISOPROPYLACRYLAMIDE))

L84 ANSWER 19 OF 20 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN 1982-09601J [51] WPIX
TI Protective sealing compsn. for ostomy devices etc. - containing fumed silica and irradiation crosslinked polyacrylamide to impart resistance to drained

fluid and a good wet and dry tack.
DC A11 A14 A96 B05 D22 P32 P34
IN HABIB, W W
PA (HOST) HOLLISTER INC
CYC 6
PI EP 66887 A 19821215 (198251)* EN 11
R: DE FR GB
DK 8202581 A 19830411 (198321)
US 4534767 A 19850813 (198535)
NL 189646 B 19930118 (199305) 8 A61F005-44
ADT US 4534767 A US 1981-272191 19810610; NL 189646 B NL 1980-5990 19801031
PRAI US 1979-90855 19791102; US 1980-185003 19800908;
US 1981-272191 19810610; US 1985-725318 19850419
REP DE 2822535; FR 2468355; GB 2038661; GB 2046773; GB 2062663; No-SR.Pub; US 3302647; US 3954105; US 3980084; US 4115339; US 4187851; US 4204540; WO 8001138
IC ICM A61F005-44
ICS **A61L015-06**
AB EP 66887 A UPAB: 19930915
A protective sealing compsn. for application to the sin in moulded form and of the type composed of a mixture of a gellable water-absorbing particulate hydrocolloid gum (I) and a non-toxic polyhydroxy alcohol (II) also contains (a) 1-3wt.% formed silica together with (b) 5-20wt.% **polyacryamide** resin, the moulded compsn. having been subjected to gamma-irradiation to crosslink (b).

The compsn. can be used in the form of moulded rings or sheets for sealing ostomy, wound drainage or incontinence devices. The presence of (a) increases the mechanical endurance of the compsn. when it is exposed to intestinal fluids and/or urine. This effect is achieved without appreciable loss of wet tack. Any resulting loss in dry tack due to the presence of (a) is overcome by incorporation and crosslinking of (b).
FS CPI GMPI
FA AB
MC CPI: A04-D04A; A12-V03; D09-C

L84 ANSWER 20 OF 20 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN 1980-08048C [05] WPIX
TI Liquid deodorant comprising sodium acrylate in aqueous medium - with high effectiveness over long periods.
DC A96 D21 D22 E12 P34
PA (NONC-N) NONCHI KK
CYC 1
PI JP 54157833 A 19791213 (198005)*
JP 60013702 B 19850409 (198518)
PRAI JP 1978-65420 19780531
IC **A61L009-01**
AB JP 54157833 A UPAB: 19930902
Liquid deodorants comprise an aqueous medium and sodium acrylate as the active component. Compsns. are highly effective over long periods of time.

Pref. the aqueous medium is water and opt. an organic solvent (e.g. alcohol, ketone, ether, ester). The deodorant is prepared by dissolving the active component in the aqueous medium. Since the deodorising effect is not obtd. when the concentration of the Na acrylate is too high, the deodorant is used as a dilute aqueous solution It is possible to use Na acrylate in combination
with Na polyacrylate, acrylamide, **polyacryamide**, Na acrylate-acrylamide copolymer, etc., and the combination may increase the deodorising effect. The viscosity and stability of the liquid can be improved by adding glycerine, ethylene glycol, Na CMC, methylcellulose, hydroxyethylcellulose, surfactant, aroma- or pH-adjusting agent fungicides

or antiseptics. Prods. can be used as toilet dust boxes, kitchen refrigerators shoes or underarm deodorants.

FS CPI GMPI

FA AB

MC CPI: A12-D; A12-V04; A12-W; D09-B; E10-C04G

=>